

A.B. ✓
R.D. 3
23.7.47

File No. 667

1939.

Collection No.

Resident's Office
Bangalore

Pros. Serial Nos.

1-5

(K)

(18) P

Subject.

The Bangalore Water Supply - improvement
of the chlorination plant.

Previous References.

(Pl: See R.D. 335/39) W.

Later References.

Draft

(Id.) H.T.

Draft submitted.

[Under clause 1 of Agreement "A" the Government of Mysore are required to supply at the High Ground Reservoir filtered water suitable for drinking purposes conforming to certain specified standard of purity. If after joint tests the water supplied is found to be below this standard the cost of purification is recoverable from the Government of Mysore. It is not known whether the suggestion now made has been examined with reference to the standard specified in clause 1 of the Agreement]

Page 112
F. 214-37

Dep 14

14/11/39
27.11.39
Sd/- 3

Dep 11

Draft for approval. We can forward the report in original, as it is an "expert's" document.

R. Nagar.

20/11/39.

T. G. S. S.

Resident.

S.N. 2. 1882

D.N. 7773.

S.N. (3)

W

Please see S.Ns. 1 and 2.
Draft to Residency Surgeon submitted.

No one has questioned the purity of

5. C. S.

on water supply, but only its
hyper-chlorination. Major Twigg
says that "provided the quality of
the supply is satisfactory" there
is no need for installation of new
chlorination apparatus. R.S. may
say up whether in his opinion
the supply is now satisfactory
or whether we shd. again press
the matter.

J 14/8

Resd.

D.S. may see & leave any remarks.
There does not seem any
need to press at present
it seems wise

J 14/8

I personally feel rather strongly about the
super-chlorination of the water. which renders
it most unpleasant to drink, spoils tea &
to a layman would seem to be somewhat
deleterious to health. If R.S. as an expert
confirms this, & it can be demonstrated that
any material sum of money is being
wasted at bottom of p4. it might be
worth while putting up facts & figures to
the same effect.

J 14/8

Page 8 of 8

The Mysore Government are under a misapprehension in regard to Major Twigg's letter. On the 2nd of July the Chief Engineer and Secretary to Govt., P.W.D., in his D.O. No.26 addressed to Major Twigg referred, among others, ~~to~~ a quotation from Messrs. Duncan Stratton & Co., for a Paterson's Chlorination apparatus for his views. The firm had stated that the apparatus was not obtainable in Calcutta and that they were addressing their principals on the subject. Major Twigg's suggestion that "in the present circumstances, it is suggested that the matter be postponed, provided the quality of the supply is satisfactory with the present arrangement" was intended to cover only the period of time to enable Messrs. Duncan Stratton & Co., to consult their principals, and was not intended as conveying ~~the~~ approval of the present system. So, far from this being the case, the A.D.M.S., to whom a copy of the p.u.c. had been sent, has replied as follows:—

"Ref: Our No.25003/II/24/M. dated 13-7-1940"

"It was suggested that the provision of a proper Chlorination apparatus at Chamaraja Sagar should be temporarily postponed in view of Public Works Department letter No.26/ dated 2nd July 1940, in which it is stated that the apparatus was not obtainable in Calcutta and that Messrs. Duncan Stratton & Co., were addressing their principals on the subject.

The statement in para 2 of Public Works Secretariat, Bangalore, letter No.P.W.618-S dated 7-8-40 cannot however be agreed to. The arrangements are not satisfactory and owing to the rough and ready method of estimating the supply of chlorine the coarse nature of the control of the output over-chlorination still occurs at intervals.

It is recommended that a proper chlorination apparatus be installed as soon as it can be obtained".

This clarifies the situation and I would suggest that the Government of Mysore be again pressed

A

19.

pressed to take necessary action. Periodical hyper-chlorination is still taking place with results which, if not actually injurious, are certainly unpleasant.

M. S.
27/viii
R. S.

U/O. No. 134/7/40 dated 27/8/40.

To The Secretary to the Hon'ble
the Resident in Mysore, Bangalore.

Drafted accordingly.
J 28/8

Draft submitted.

29.8 *KH 40* This is a peculiar case as it is quite obvious from Thirgo's letter (encl. to P.N.C.) that the Govt. of Mys. have not understood him. From A.D.N.S.'s letter quoted at 28.A it is clear that he has since revised his attitude. Draft may move.

N.S.

P 31/8

J 28/8

Rest.

P.N. 4: 18me

all

10/3/41

Please see S.Ns.1 to 4^x and the foregoing notes from para 5.

13

The modernisation of the chlorination apparatus may perhaps be postponed till conditions become normal after the war.

14

If approved, the Residency Surgeon may see the P.U.C. U/O and say whether he considers that the precautions taken by the Mysore Government to regulate the chlorine content in the filtered water are satisfactory or whether the matter should be pressed further with a view to have a chloramine plant at the Combined Jewell Filters.

12/11/41
31. 1. 41

Secy

13 I must admit that I have not noticed hyper-chlorination recently.

R.S.

all/2.

U/O No.R.F.667-29, dated 1-2-41

15

The matter may be postponed till conditions become normal after the war, or earlier[?] if the Military authorities raise the question again.

[Signature]

Lt.-Col., I.M.S.

U/O.No. 1242 dated 28-7-41.

To:-

The Secretary to the Hon'ble
the Resident in Mysore, Bangalore.

Secy

all 29/7
29/7/41

OFFICE OF THE HON'BLE RESIDENT IN MYSORE, BANGALORE.
29 JUL 1941
Diary No. 8502
File No.

Please see para 14 of notes ante. A draft
to the Government of Mysore is submitted.

HSIL
30.7.41.

KIC
30.7.

R.
1.8.41

~~E. A.~~
~~Cross~~
~~See.~~

Why was R.S. office allowed to keep
this file for 5 months?

16

Explained
separately
KIC
5.8.41

P.C. does not demand an answer
& we need not commit ourselves by
issuing the draft which is not
very clear anyway. N.B.

all 2/2

Answer

No. 214/24/39

RESIDENCY SURGEON'S OFFICE,
BOWRING CIVIL HOSPITAL.

Bangalore, 14th Novr. 1939.

FROM

Lt.-Col. J.B. Hance, C.I.E., O.B.E., M.A.
M.D. (Cantab.), F.R.C.S. (Ed.), F.R.C.S. (Lond.)

RESIDENCY SURGEON

Bangalore.

TO

THE Secretary
to the Hon'ble the Resident
in Mysore, Bangalore.

OFFICE OF THE HON'BLE THE RESIDENT IN MYSORE, BANGALORE. Diary No. 11,601 File No. R.D. 667/39
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Subject:—

BANGALORE WATER SUPPLY.

SIR,

I have the honour to forward herewith copy
of letter No. 25003/97/M. dated the 11th of November
1939 received from the A.D.M.S., Madras District.

2. It will be seen that the existing system of
water-supply has received a critical and expert
review by the Military Hygiene authorities, whose
opinion is that while the clarification and filtra-
tion apparatus at the Chamarajasagara Water Works
leave no ground for criticism, the system of chlori-
nation is not on similar high level, being inadequate
and antiquated.

3. As regards the Hebbal Jewel Filters, the
system of clarification and filtration is satisfac-
tory but the chlorination is again of the same anti-
quated type. As a result, the extra chlorination
which results in super-chlorination is necessary,
which materially detracts from the potability of the
water-supply, and is, moreover, unnecessary.

4. I have therefore the honour to support the
request of the A.D.M.S., that the Hon'ble the Resident

Resident will be pleased to represent to the appropriate authorities of the Mysore Government the desirability of modernising the chlorination apparatus at Chamarajasagara Water Works from which the water-supply of the Civil and Military Station is drawn.

5. As regards the Hesaraghatta water-supply, this I understand is distributed solely to Bangalore City; but I have no doubt that the Mysore State authorities would probably wish to include this supply in such modernization as they may undertake.

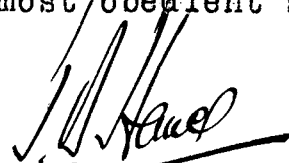
6. Major Twigg, R.A.M.C., D.A.D.P., Madras District, informs me that the cost of the apparatus recommended is not*high, and he would, I am sure, be glad to furnish details and specifications to the Mysore Public Health Department should they so desire.

(*Rs.3000 to
Rs.4000)

I have the honour to be,

Sir,

Your most obedient servant,



Lt.-Col., I.M.S.,
Residency Surgeon.

Encl:1)

Letter No.25003/97/M. dated the 11th of November 1939
from the A.D.M.S., Madras District, to the Re-
sidency Surgeon, Bangalore.

Subject: Water Supply

I have the honour to report that I visited the water works at CHAMARAJAH on 25th September 1939. I was accompanied by Lieut-Colonel J. Spottiswoode, M.C.R.E., Madras District, and Major Twigg, R.A.M.C., D.A.D.P., Madras District, I was shown round by the Superintendent who explained the various operations viz. the clarification, filtration and chlorination of the water.

Clarification and filtration is carried out most efficiently in a very modern plant, and the supervision is excellent.

The plant for addition of chlorine is not up to the same standard as the remainder of the plant at Chamarajah, the dosage of chlorine is regulated by the loss of weight of a cylinder of gas in relation to the flow of water.

It is calculated to add 0.2 parts per million of chlorine to the water.

On 18th October I visited the water works at Hebbal where I was met by the Engineer-in-Charge. Here I observed the same careful supervision and control. The water on being delivered into the reservoir from the pipe line from CHAMARAJAH is examined for the amount of residual chlorine which I am informed is usually about 0.05 parts per million, at this stage ammonia is added, and also chlorine, to bring the amount of chlorine up to 0.2 parts per million.

At HEBBAL about one million gallons of water are drawn daily from HESARGHATTA - this water is clarified,

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filtered and chlorinated at HEBBAL. The plant for clarification and filtration of this water is sufficient although not so modern and efficient as that at Chamarajah. The chlorination plant is of a very crude type and consists merely of a cylinder of gas on a weighing machine discharging into the main - the dosage being regulated only by the loss of weight of the cylinder over a period of time.

I have the honour to state that, in my opinion, it would be more satisfactory to instal one modern plant at CHAMARAJAH for the chloramination - as distinct from chlorination of the water.

It would have the advantages of:--

- (i) More efficient sterilization of the water.
- (ii) There would be no necessity to rechlorinate at HEBBAL and High Ground Reservoir.
- (iii) There would be no smell or taste of chlorine in the water.
- (iv) Reduce operation charges.
- (v) A modern chloramination apparatus would be in keeping with the rest of the plant at CHAMARAJAH.

It will be seen that under the present system, the water supply of the Civil and Military Station undergoes the following treatments (apart from sedimentation and clarification):

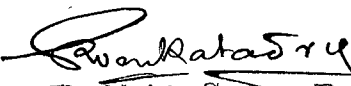
- (i) Chlorination at CHAMARAJAH.
- (ii) Chloramination at Hebbal.
- (iii) Chlorination at High Ground Reservoir.

If an efficient chloramination plant is installed at CHAMARAJAH there can be no possible object in repeating sterilization processes at two further points on the pipe supply with resultant waste of money and unpleasant

unpleasant taste of chlorine in the water.

Further, I have the honour to request that you would kindly represent this matter to the Hon'ble the Resident in MYSORE.

"Copy"


for Residency Surgeon Bangalore.

hks n

S.N. 3

No. P.W. 618-S

Encls: one.

PUBLIC WORKS SECRETARIAT,

Dated Bangalore, 7-8-1940

FROM

~~Divan~~ ~~BANABUR~~ N. Sarabhoja Esq., L.C.E., M.I.E., (Ind).,

~~N. W. ADVANCAR, D.A., L.C.E., M.I.E. (Ind), K.C.E.,~~

Secretary to Government,

Public Works Department,

Bangalore.

OFFICE OF THE HON'BLE THE RESIDENT IN MYSORE, BANGALORE. Recorded 9 AUG. 1940 Diary No. 7773 File No.

The Secretary to the Hon'ble the Resident in Mysore,

B a n g a l o r e .

SIR,

Subject:- Bangalore Water Supply - Modernising the
chlorination apparatus at Chamaraj
Sagar.

AF. 667-39

With reference to your letter No. F.335-39/ G & A. dated

5th December 1939, regarding the above subject, I am directed to
inform you that Major Twigg, R.A.M.C., D.A.D.P., Madras District,
was addressed in the matter as suggested.

A copy of his final reply letter No. 25003/II/24/M. dated
the 13th July 1940, is enclosed.

2. The present arrangement for chlorine feed at Chamaraj Sagar
seen to be quite satisfactory. The Government of Mysore, therefore,
agree with the suggestion of Major Twigg that the matter be postpone

I have the honour to be
Sir,
Your most obedient servant,

N. Sarabhoja, 9/4/40
Secretary to Government,
Public Works Department.

A.K.

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Letter No. 25003/II/24/M. dated the 13th July 1940,
from Major T. H. Twigg, R.A.M.C., D.A.D.P., Madras District,
to the Chief Engineer and Secretary to Government, Public
Works Department, Bangalore.

Subject:- Bangalore Water Supply.

+ Is it /

I have the honour to refer you to your letter No. 26
dated the 2nd July 1940 and to state that the automatic ---
apparatus offered by the Paterson Engineering Co., appears
to be quite suitable. But under the present circumstances,
it is suggested that the matter be postponed, provided the
quality of the supply is satisfactory with the present ----
arrangement.

The enclosures to your letter under reference are
returned herewith.

"C O P Y"

Jack Shale
48

For Secretary to Government,
Public Works Department.

HE

The reply to this communication should be addressed to the Secretary to the Resident in Mysore, Bangalore, by designation and not by name.

S. M. J.
No. R.F.667-39
G & A.

19

FROM *assured*
2/9/40

THE SECRETARY TO THE HON'BLE THE RESIDENT IN MYSORE.

To

The Chief Secretary to the Government of
His Highness the Maharaja of Mysore, Bangalore.

Dated Bangalore, the *2nd* Sept. 1940.

Bangalore Water Supply - Modernising
the chlorinating apparatus at Chamaraja
Sagar.

SIR,

I am directed to refer to letter from the Secretary to the Government of Mysore, Public Works Department No.P.W. 618-S, dated the 7th August 1940, and to say that it is regretted that its enclosure appears to have given some occasion for misapprehension. On enquiry it seems that it was Major Twigg's intention to convey the suggestion that, pending the result of trade enquiries from their principals by Messrs. Duncan Stratton & Company, which under present conditions will take a month or two, the matter might be allowed to fall into abeyance. It was not Major Twigg's intention to convey the impression that it was no longer considered necessary to proceed with the proposal.

2. In view of this explanation of the real situation and the hyper-chlorination which still prevails, I am to request that the Government of Mysore will be so good as further to consider the matter, and will proceed with the proposal to instal modern chlorinating apparatus at Chamaraja Sagar.

I have the honour to be,
Sir,
Your most obedient servant,

e/c *12/9*
for SECRETARY TO THE RESIDENT.

10/11/41
No. P.W. 2366/S

Encls :

FROM

97-667/39

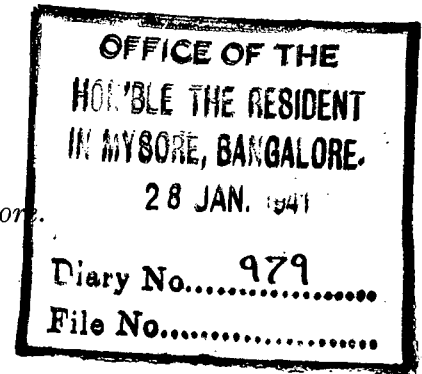
S.N.5
Day
12

W.M.28

PUBLIC WORKS SECRETARIAT,

Dated Bangalore, ... 27. 1. 1941.

The Secretary to Government,
Public Works Department,
Bangalore.



To

The Secretary to the Hon'ble
the Resident in Mysore,
Bangalore.

Sir,

Bangalore Water Supply - Modernising the chlorinating
apparatus at Chamaraj Sagar.

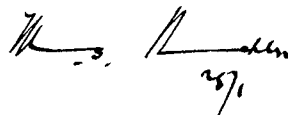
J.N.J. (W)
cp 9

I am directed to refer to your letter No.R.F.667-39/G&A dated the 2nd September 1940 with regard to the proposal to instal a modern chlorinating apparatus at Chamaraj Sagar and to state that, on enquiry made of the several firms dealing in the said apparatus, the cost is seen to vary from Rs 8,000 to Rs 15,000 and it would take about six months to get the apparatus from the date of placing orders. There is also likely to be considerable delay in transit owing to the present international situation. An additional set of similar apparatus would also be necessary at the Combined Jewell Filters for chlorinating the additional quantity of $\frac{1}{2}$ to 1 million gallons of water drawn from the Hessarghatta Tank to supplement the maximum quantity of $5\frac{1}{4}$ million gallons that could be pumped from Thippagondanahally. In these circumstances, His Highness' Government feel that the proposal to equip the Bangalore Water Supply with two sets of the modernised apparatus might be kept in abeyance for some time on account of the heavy cost as also the delay and risk involved in obtaining them.

2. As regards the present arrangement made at Thippagondanahally for chlorination of water, I am to state that a small dosage of chlorine is being given to the filtered water at Thippagondanahally to compensate for the deterioration in the quality of water owing to the long distance it traverses through the pipe line to the Combined Jewell Filters and necessary precautions are being taken to regulate, under the chlorine content in the filtered water. As the present

arrangement is working satisfactorily it is proposed to continue it until it becomes possible to procure the required apparatus under normal conditions, and should there still be any defects observed in the system, this Government are prepared to consider the proposal to have a good chloramine plant at the Combined Jewell Filters in place of two sets of the chlorinating apparatus, one at Chamaraj Sagar and the other at the Combined Jewell Filters.

I have the honour to be,
Sir
Your most obedient servant,



Secretary to Government
Public Works Department



NCN/25